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[Reprinted from the Boston Medical and Surgical Journal of August 19, 1886.]

A DISCUSSION OF THE STATISTICS OF OVARIOTOMY.[1]

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Of all the major surgical operations, ovariotomy has received the greatest attention with regard to its statistical results. The reason for this is very apparent when we recall its early history. It was an operation very bitterly condemned and assailed by the profession at large at the time of its first performance by McDowell, and for many years after.

Those who believed in its promise of usefulness presented to its opponents their lists of lives saved from a disease otherwise hopeless, and usually soon fatal, as an unanswerable argument in its favor. Although these statistics have long since silenced all question as to the propriety of ovariotomy, still the prominence given them has continued and increased, so that, to-day, the ovariotomist, as a rule, simply presents to the profession his number of operations and the percentage of recoveries, as representing in an exact measure his skill in making the operation, and his wisdom in the details of after-treatment.

The various conditions that determine the result of an ovariotomy, and, at the same time, are beyond the control of the operator, are so much in the background, that the unsuccessful cases gives the profession and the surgeon as well, the feeling that there must have been some fault of omission or commission on his part.

[1] Read before the Section of Obstetrics and Gynæcology, Suffolk District Medical Society, May 19, 1886.

That is, such prime importance has been given to the bare statistics as almost to persuade one that the skill of the operator alone is the sole factor in determining the result, and that an ovariotomist of perfect skill and wisdom would save every case. The effect of this tendency to regard the operator as entirely responsible for every unfavorable result has been to stimulate him to the most careful study of every detail of the operation, and, in consequence of this care, the modes of operative procedure have become well-nigh perfect.

This weight of responsibility loaded upon the shoulders of the ovariotomist has contributed, therefore, to his success. It may also have had its effect, not quite so salutary, upon the statistics that have been recorded. It is not unreasonable that the specialist in abdominal surgery, where every failure, in a certain way, reflects upon his skill, and is charged up to his discredit, should present his statistics in the most favorable light that they can bear. Cases in which he may have avoided an operation can be omitted; also those cases of incomplete operation: that portion of his entire list which gives the best percentage of recovery may alone be published.

In other fields of surgery, and in medicine as well, the unreliability of statistics is conceded; but in ovariotomy, for the reason I have given, they are, perhaps, more at variance with the actual results than in the case of other operations. "Statistics alone seldom prove anything, certainly they never explain anything," says Lawson Tait. This, I believe, is not quite true, and, although I am criticising the statistics as not always representing the full proportion of deaths to the recoveries in abdominal surgery, yet I believe they are sufficiently affected by the real results to afford absolute proof of the rapidly-increasing success of ovariotomy.

At the present time, the statistics of ovariotomy in America, when compared with those of our English cousins, seem to show a very decided balance in their favor. One possible reason for this may be that comparatively fewer men operate there than here, and, consequently, that there is a much smaller proportion of operations by inexperienced surgeons, while those who do operate have a much larger experience than falls to the lot of any American. Another reason, and, I believe, the main one, is this, that every standard text-book, at least, so far as I know, except the last edition of Emmet's work, that has been published in America, and which treats at all of ovariotomy, advises postponement of surgical interference, except tapping — "with rare exceptions, a criminal procedure," says Stilling, and assents Thornton — until the failing health of the patient demands it. While in England, formerly, Dr. Clay, Mr. I. B. Brown, Bryant, Hutchinson and Wells advocated early operation before any failure of the patient's strength was apparent. Mr. Wells, however, in 1872, advised delay until considerable impairment of the general health had occurred. Yet in the last edition of his work upon ovariotomy, and in his later utterances upon this subject, he is in accord again with the prevailing English teaching, which favors early operations. In short, I believe that this difference between the English and American authors, in their recommendations given the general practitioner as to the proper time for ovariotomy, has, in great measure, determined the difference in the statistics of the operation in this country and England.

While admitting that in no other operation does so much depend upon the skill, experience, and care of the operator as in this, still it may be worth our while to consider briefly some of those conditions, independent of the surgeon, that may make a disastrous

result inevitable. Taking the ovarian cases together, as they present themselves to the ovariotomist, in this country, at least, a certain proportion of them will be found to have in themselves an element of essential fatality. That is, the moment these cases are subjected to operation, they become necessarily fatal, and that, too, in spite of all care and skill in the performance of the operation, and independently of all accidents that may come at the time of it or afterwards. Every ovariotomist, unless of very limited experience, cannot fail to recall one or more cases of his own that belong to this class, which I have designated as essentially fatal. Cases in which he found conditions of the tumor or patient, or both, such as would necessarily determine an unfavorable issue of the operation — cases in which the ideal operator of perfect skill would have been equally unfortunate. Prominent among the conditions that, in many instances, render an operation essentially fatal, may be mentioned degenerative changes in cyst-walls, cyst-contents, or in the pedicle; twisting of the pedicle, extensive adhesions, particularly within the pelvis, depression of the patient's vitality by septic poisoning, by tapping, by long continuance of the disease, or by the malignant character that the cystoma often acquires.

I have operated in two cases of degenerate cyst-contents, attended, also, with parietal, intestinal, and pelvic adhesions, and with a marked septic condition in each patient. The first case, which recovered, was reported in the *Boston Medical and Surgical Journal* in April, 1884. The second I now briefly refer to in illustration of those cases necessarily fatal on account of the conditions mentioned:

Mrs. F., Pepperell, Mass., age forty. At the time of examination, June, 1884, an apparently solid single tumor occupied the entire abdominal cavity and was

firmly impacted in the pelvis. The uterus was held immovably fixed in its position; its cavity of normal length. The case was supposed to be one of uterine fibroma. Patient's temperature 102°, pulse 100. Heart's action feeble, vomiting persistent. An operation was discouraged, more on account of the patient's general condition, than for the reason that the growth was supposed to have been of uterine origin. Two weeks later Mrs. F.'s condition had sensibly improved. With the assistance of Dr. Benoit, Heald, Fletcher, Spaulding and Hartwell, I made an abdominal section and removed two ovarian myomata, which had grown, each from the corresponding ovary, and were so closely joined to each other as to give the impression of a single ovoid growth. Except a small cavity in each filled with pus, they had the firm consistence and structure usual to fibroids. They weighed about seven pounds each. Both were adherent to the omentum, the intestines, and the pelvic peritoneum. Very little blood was lost in the separation of the extensive adhesions and the operation was completed as quickly as possible, occupying only about fifty-five minutes. Yet directly after, the patient died from shock. Had this case been in hands much more skillful and experienced than mine, I am sure the result could not have been different. In a word, it was a case with inherently fatal conditions.

In one case with a degenerate pedicle, when the cyst contents were being drawn off with a trochar, a profuse hæmorrhage within the sac, replaced with blood, the liquid removed from the tumor, and, although arrested, as soon as it appeared, the loss of blood was sufficient to cause a fatal syncope. In this instance neither experience nor skill of the operator could have availed in anticipating or checking this fatal hæmorrhage. The element of fatality existed in the patient.

In two cases of extensive parietal visceral and pelvic adhesions, in which I have operated one recovered and the other died. Whether the latter was a case necessarily fatal in itself, or one that might have been saved in the hands of a more experienced and skilled ovariotomist, I cannot say.

In that class of cases, which may be denominated as uncomplicated, simple and recent, and recent cases with rare exceptions are both uncomplicated and simple, I have operated fourteen times with thirteen recoveries and one death. This case I have previously reported. The unfavorable result was, by reason of an accident during the operation, and in a way the fault of the operator.

For the purpose of making an approximate estimate of the proportion of essentially fatal cases in a large number of ovariotomies, I have collected the reports of six hundred operations by thirty-three different operators, mostly American. These are all cases that have been reported within the past five years, although the operation was performed in some instances somewhat earlier than five years ago.

I have confined myself to these recent operations, because they would contain the smallest proportionate number of deaths from accidental causes, certainly much smaller than the earlier statistics of American ovariotomy would include.

While, of course, it is utterly impossible to make any very exact computation of the number of essentially fatal cases in the list of six hundred, yet an examination of the conditions as existing in very many of those that were unsuccessful, convince one that no mean proportion of them were of this character.

In the entire number there were seventy-five cases of extensive adhesions within the pelvis and elsewhere; of these thirty-three recovered, forty-two died. Al-

though the complete statistics of the different ovariotomists, whose records I am making use of, vary very widely, still in this class of cases, their results are quite nearly uniform. One, reporting the largest number of cases of pelvic adhesions, lost one-half; another eleven out of nineteen; another five out of nine. Therefore, if the most skillful and experienced operators lose rather more than one-half of this class of cases, that is, those with extensive pelvic adhesions, we may very fairly conclude that, at least one-half of them are essentially fatal, and may place thirty-seven of the seventy-five in this category.

Fifty cases of the six hundred were attended with degeneration in some form, of the cyst-walls, of the cyst-contents, or of the pedicle. Nearly all of them were still further complicated by adhesions.

It would seem, too, whenever degeneration, resulting especially from the mature age of the tumor —from its senility— commences with the usual inflammatory action, that, at the same time a great tendency to the formation of adhesions is developed.

Of the fifty cases twenty-six died, and twenty-four recovered. In this class, too, as in the preceding, the results of different operators were nearly the same. No matter into whose hands the patients with degenerate cystomata came, about one-half of them died. So in this second class, we have, practically, twenty-five cases essentially fatal. In the above class are included fourteen cases, that had been tapped, some of them a large number of times, before the operation. Five recovered, nine died. There were eight of these cases, in which the general septic condition before the operation was marked, in which there was considerable elevation of temperature and acceleration of the pulse-rate; six were fatal, two recovered.

Belonging partly to one and partly to the other of

the two preceding classes, there were reported ten cases of papillomatous cysts. Six recovered, four were unsuccessful.

Dolan says of these tumors, "They are very intolerant of surgical interference, and are very formidable both for operator and patient." Many of them starting from the parovarium grow between the folds of the broad ligament stretching it over the cyst surface, while others, taking their origin from the nilum of the ovary, often become intraligamentous as their development progresses. These tumors are very bountifully supplied with blood, forming extensive adhesions from their inception, often impossible of removal except by enucleation, growing very closely upon the uterus, even when operated upon very early, make the case a difficult one and sometime necessarily fatal.

Yet, of every variety of ovarian cystoma, this most emphatically demands the earliest possible removal, because of its tendency to degenerative change and rupture, and, because, if it be not malignant from its commencement, it soon acquires that character. An examination of the detailed reports of the six hundred cases, shows several that were essentially fatal from various causes other than extensive adhesions or degenerative changes, yet from causes inherent in the patient and not dependent upon the operator.

Therefore if my deductions are substantially correct, we have in the whole list under consideration, rather more than sixty cases that were essentially fatal. Thirty-seven on account of pelvic adhesions, twenty-five by reason of degenerative changes, and the few additional ones just mentioned.

The statistics of these six hundred ovariotomies, made by thirty-three different operators, reported with sufficient detail to indicate the conditions attaching to individual cases, show an unavoidable fatality in at

least one-tenth the whole number. And I have no doubt, that were it possible to obtain an exact history of every other ovarian case and ovariotomy in this country for the past six years, we would find this ratio of essential fatality fully maintained, and, furthermore, could we estimate accurately, those most important factors in determining the result of an ovariotomy, the patient's vitality, power of endurance and of resistance, in relation to the necessary length or severity of the operation, it is probable that we would find our proportion of essentially fatal cases still further increased: and the fatalities for which the surgeon is responsible, in like measure diminished. The American ovariotomist, therefore, operating upon all the cases presented to him — as it is his duty to do with rare exceptions — who has saved ninety per cent. of his patients, is to be congratulated, as having eliminated, practically, all deaths from any lack of skill on his part or from accidental causes.

This proportion, of course, would only hold with large numbers of cases. Those essentially fatal would be too unevenly distributed to make any small number of ovarian operations any criterion of their relative frequency.

In a general way, the deaths after ovariotomy may be divided into two classes :—

(1) Those due to lack of skill or care on the part of the operator, faulty modes of operation, or to accidents.

(2) Those necessarily fatal by reason of the existing conditions of tumor or patient or both.

Looking to the future results of ovariotomy in America, the question of how much it is possible to diminish the fatal statistics of the first class, comes to us. Certainly in the whole range of surgery, there are no operative procedures that require more special

preparation and experience than ovariotomy and its kindred operations. Could all patients with ovarian cystomata be in the care of specialists in abdominal surgery, the number of deaths from lack of skill and experience in the operator would be largely decreased, and those from accidents as well, for the latter are avoided by the skill and especially by the experience of the surgeon. In the details of the operation, through its different stages, the modes of procedure are almost universally agreed upon; the only diversity of opinion and practice being in regard to Listerism and the frequency of the use of the drainage-tube.

In short, that degree of perfection has already been attained that would seem to admit of very little future improvement. Whatever advance is made, therefore, in this class, will come mainly from the increasing experience of those who perform the operation.

From this, it follows that if any great improvement in the statistics of American ovariotomy is to take place, it must be by a diminution of those deaths comprised in the second class, namely, those essentially fatal. Fortunately, too, this class contains the larger number of unsuccessful results, and also is the one in which the greatest improvement is possible.

In the twenty-five cases with degenerative changes and the thirty-seven with pelvic adhesions, the element of essential fatality was, for the most part, an acquired one, and had the operation been performed sufficiently early, in the place of this appalling list of fatalities, would have been substituted, less a few cases, a like number of successes.

The list of essentially fatal cases will be nearly obliterated from our statistics, when American physicians shall all agree in regarding a patient with an ovarian cystoma as constantly menaced with great

and increasing danger to her life, and shall concur in urging its removal with the least possible delay.

Then will the statistics of American ovariotomy express in full measure the real skill and ability of American ovariotomists.